DEPARTMENT OF NOTES, REVIEWS, ETC.

It is the purpose, in this department, to present from time to time brief original notes, both of methods of work and of results, by members of the Society. All members are invited to submit such items. In the absence of these there will be given a few brief abstracts of recent work of more general interest to students and teachers. There will be no attempt to make these abstracts exhaustive. They will illustrate progress without attempting to define it, and will thus give to the teacher current illustrations, and to the isolated student suggestions of suitable fields of investigation.—[Editor.]

A CONVENIENT APPARATUS FOR LABORATORY PHOTOGRAPHY

During the past seven years the writer has used with considerable satisfaction an apparatus that is well suited for use in photographing various types of biological specimens. Every well-equipped biological laboratory should be provided with an apparatus of some sort which will make possible the ready photographing of specimens when placed in a horizontal position. Doubtless many have exhausted their patience trying to get satisfactory pictures of bacterial cultures, fungi, flowers, insects, embryos, etc., which must be supported in a vertical position if an ordinary tripod is used, and many makeshifts are frequently brought into play, and these oftentimes without the desired results. It was a few trying experiences that led to the construction of the apparatus described.

The prototype of the apparatus constructed was found in the crude device described and illustrated by Smith[1] as a "simple apparatus for holding the camera in place when one wishes to photograph down." The apparatus shown in the accompanying illustration (Plate XXVI, Fig. 1) consists of two essential parts: the horizontal stage, a piece of French plate glass, 2x3 ft., supported six inches above the platform carrying the backgrounds; and the rigid upright support permitting the adjustment of the camera at any desired height above the stage. The plate glass is elevated 6 inches above the platform and rests upon a support at the foot of the upright for its entire width and is held in place at the opposite end by two wedge-shaped corner posts. All the surfaces in contact with the glass are padded with strips of felt. The upright support, 8 inches wide and 6 feet high, is firmly braced to the narrow rear extension of the platform and is provided with a medium longitudinal slot

1. Smith, Erwin F. Bacteria in Relation to Plant Diseases. Vol. 1, p. 133. 1905.

just large enough to carry a tripod screw. In photographing small specimens the camera can be attached directly to the upright support, but for large specimens it is necessary to have the camera removed from the upright. In order to secure this the apparatus is provided with a quadrangular frame the same width as the upright, and of such a size as to throw the camera over the center of the stage. The illustration shows a Premo, 4x5 camera in position. The quadrangular frame is held in position by two wooden screws and can be adjusted to any desired height, while the camera can also be raised or lowered upon the frame.

The platform is supported by five large, wood-roller, ball-bearing castors, three of which appear in the illustration. The apparatus constructed according to this plan is easily moved about the laboratory; it is light, but sufficiently rigid to prevent vibrations of the camera. It is always ready to use at a moment's notice, and long exasperating delays are avoided.

The object to be photographed is placed upon the plate glass stage and is thus held six inches above the background. By this means shadows are entirely avoided. Various colored backgrounds, which for purposes of record are numbered, should be provided. For these backgrounds sheets of bristol board, or better, picture matting with rough surfaces, may be satisfactorily employed. The Ingento convertible tripod attachment is sometimes used for photographing down, and is especially desirable for field work, but the apparatus here described is so far superior for laboratory work that it will repay the cost of construction many times.

The writer uses a long-focus, 5x7, Premo camera with various combinations of lenses for nearly all work. Specimens three feet in length may be photographed, or small objects may be taken natural size or enlarged six times or slightly more. The apparatus is adapted for use in various kinds of botanical, bacteriological or zoological work. The quality of work obtained by its use can be seen in Bulletin 135, "Symptoms of Disease in Plants" published by the writer from the University of Texas. Practically all the halftones in the above bulletin are from photographs taken with the type of apparatus here described.

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